

Glossary:

How Humans Came To Construct Their Worlds

Agricultural revolution: The transition from **hunting and gathering** to settled **agriculture** starting ~12,000 years ago in Mesopotamia. The development of and transition to agrarian life ways and technology was piecemeal in different places and at different times instead of a sudden "revolution."

Agriculture: A subsistence strategy that relies on **domestication** of species instead of **hunting and gathering** wild animals and plants.

Anthropocene: The proposed geologic epoch defined by human influence on the Earth. There is yet to be consensus for when the anthropocene began with suggestions ranging from the start of the **agricultural revolution** to the first atomic explosion.

Apes: A branch of "old world" primates characterized by the lack of a tail due to a mutation of the TBXT gene. Apes consist of the families, *Hylomatidae* ("lesser apes": gibbons and siamangs) and *Hominidae* ("great apes": orangutans, gorillas, chimpanzees, bonobos, and humans).

Architecture: The art and technical process of designing and building physical structures, particularly those that can be occupied for living or work.

Artificial intelligence (AI): A form of intelligence in which a machine system is able to make rational decisions based on perception of its environment.

Bauplan: German for "building plan" or "body plan," it is a generalized set of physical characteristics shared by a group of **phylogenetically** related organisms during some point in their development.

Before common era (BCE): A notation for the Gregorian calendar. BCE 1 precedes immediately before 1 CE with no intervening year zero.

Before present (BP): A time scale used in archaeological dating in which the present is considered the year radiocarbon dating was introduced (1950 CE).

Common era (CE): A notation for the Gregorian calendar. 1 CE follows immediately after BCE 1 with no intervening year zero.

Cooperative/Sociable weaver birds: Birds belonging to the family, *Ploceidae*, that are characterized by gregarious and cooperative behavior. Weavers work together to accomplish tasks, such as building communal nests, helping raising the chicks of others, and defending the colony from predators.

Domestication: The process of artificial selection by humans for desired traits of plants, animals, fungi, and microorganisms. This implies the complete control of the reproduction of those species.

Epipaleolithic-Neolithic transformation (ENT): The cultural, social and economic transformation from **Paleolithic** mobile

foraging peoples to **Neolithic** super-communities that became the first large-scale sedentary societies in southwest Asia. The transformation is marked by accelerating cultural and technical innovation, accompanied by large-scale demographic, cultural, social, and economic change. The ENT is seen as an inflection point in the rate of human cultural evolution, leading on to socio-economic and political inequality, urbanism, kingdoms and empires in the following millennia.

EvoDevoSocio (Evolution/Development/Society): The EvoDevo approach stresses that evolution yields biological mechanisms for both development and adult function of members of a species. The EvoDevoSocio framework adds that development is shaped not only by the genome but also by the physical and (especially in humans) the social environment in which the individual develops. To close the loop, humans in turn shape the environment and so cultural evolution has played a crucial role in changing the social, physical and increasingly symbolic and technological environments in which most humans now develop.

Foraging: Searching for wild food or provisions as opposed to cultivating food crops or breeding livestock.

Göbekli Tepe: An archeological site in Southeastern Turkey. Göbekli Tepe is a settlement dating to c. 9,500-8,000 BCE and is famous for its "monumental architecture" of large circular structures containing stone pillars (megaliths) decorated with reliefs. The structures were built by hunter-gatherers during the pre-pottery Neolithic and represent one of the first examples of monumental architecture.

Holocene: The current geological epoch, from about 11,700 years ago (after the end of the last Ice Age cycle) to the present that is marked by globally warmer and more stable climates.

Holocene Sea Rise: The early Holocene Sea Rise period (or EHSLR) is when the Earth underwent warming and meltwater release during the period between 11,650 and 7000 years ago, and consequently the volume of sea water increased. The sea levels rose from some 125 meters below the contemporary level to 2 meter above it, and then dropped to the present level. The coastlines moved inland and most contemporary islands, both large and small, were isolated off their mainlands.

Hunting and gathering: A subsistence strategy in which most or all food is obtained by **foraging** and is in contrast to **agriculture**, which rely mainly on domesticated species.

Kalambo Falls, Zambia: An important archaeological site in Africa with a sequence of human activity over 250,000 years. Kalambo Falls is located in northeastern Zambia, along the border with Tanzania.

Last Glacial Maximum (LGM): The Last Glacial Maximum occurred about 20,000 years ago (or more specifically between 24,000 and 18,000 years BP) during the last phase of the **Pleistocene** Epoch, when the global sea level was some 125 meters lower than it is today, due to the sea water being

locked up as glaciers and ice sheets, and having reached their maximum total mass during the last ice age. The climate was much colder and drier.

Neolithic: Meaning "new stone age," it is an archaeological period representing the final division of the **Stone Age** in Europe, Asia, Mesopotamia, and Africa. The Neolithic dates between 10,000 and 2,000 **BCE** and encompasses the "neolithic revolution" in which farming, **domestication**, and permanent settlement began.

Niche Construction: A form of ecological inheritance in which organisms alter the environment in ways that affect the developmental context and selection pressures acting on subsequent generations.

Paleolithic: A broad prehistoric period during which stone was used to make tools and weapons and is synonymous with **Stone Age**. During the Paleolithic, hunting and gathering (foraging) was the primary subsistence method. The period ended with a flourishing of culture, not only in the manufacture of new stone (and bone tools) and other innovations (such as spear thrower, bow and arrow, eyed needle, fishing implements), but also the development of splendid cave art paintings and engravings. Subdivisions:

- Lower Paleolithic: ~3.4 million years ago (mya) - 300 thousand years ago (kya).
- Middle Paleolithic: Consists of use of prepared cores (i.e. Levallois Technique) and hafted tools and weapons. ~300 - 30 kya.
- Upper Paleolithic: Coincides with behavioral modernity and predates the advent of agriculture. Artifacts include finely crafted stone blades and bone and antler tools, such as harpoons and needles. ~50 - 10 kya.

Phylogenetic tree: A branching diagram showing the evolutionary relationships among biological species, or other entities, based on their physical or genetic characteristics.

Sahul: During the Pleistocene Epoch, when the sea level was as much as 150m lower than today, the land masses of Australia, Tasmania and New Guinea were all part of a broader continental area, which is called the Sahul Shelf by contemporary geologists.

Stone Age: The prehistoric period during which stone was used to make tools and weapons and is synonymous with the **Paleolithic**. ~3.4 million years ago (mya) - 10 thousand years ago (kya). In African archaeology, stone age chronology is divided into Early Stone Age (ESA): ~2.6 mya to ~300 kya; Middle Stone Age (MSA): ~300 kya to ~50 kya; and Later Stone Age (LSA): ~ 50 kya to ~39 kya.

- Early Stone Age is characterized by the development of the first African stone tools, such as the Oldowan technology used by Australopithecines, and the later Acheulean technology, used by *Homo erectus*.
- Middle Stone Age is characterized by a transition from Acheulean to Levallois technology and the earliest known modern human behavior.
- Later Stone Age is characterized by microlithic industries and punch-struck blades, revealing fully modern human behavior.

Sunda: During the **Pleistocene** Epoch, when the sea level was as much as 150 meters lower than today, the land masses of Thailand, Malaya, Sumatra, Java, Borneo, and the Philippines were all part of a broader land shelf which is called Sunda by contemporary geologists, being the old continental Southeast Asia.

White-browed sparrow-weaver: A species of **cooperative/ sociable weaver birds** that is found throughout central and north-central southern Africa. White-browed sparrow-weavers form groups of two-to-eleven individuals, which consist of one breeding pair with the remaining as non-reproductive individuals.